CLAIMS

What is claimed is:

1. A method, comprising:

quantizing a channel response function of a signal received from a transmitter; and

generating a channel state information packet to be transmitted back to the transmitter wherein the packet includes the quantized channel response function.

2. A method as claimed in claim 1, further comprising, where the channel response function is represented by M complex numbers, limiting the channel response function to N complex numbers where N is less than M.

3. A method as claimed in claim 1, further comprising converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to said quantizing.

4. A method as claimed in claim 1, further comprising converting the signal from at least one of a frequency domain representation or a time domain representation to power allocation and modulation type instructions prior to said quantizing.

5. A method as claimed in claim 1, further comprising converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to said quantizing, and where the channel response function is represented by M complex numbers, limiting the channel response function to N complex numbers where N is less than M, wherein the N complex numbers are limited to values having time delays less than a predetermined delay spread.

6. A method as claimed in claim 1, further comprising calculating a channel response function on the signal prior to said quantizing, wherein said calculating includes subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein said quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

7. A method as claimed in claim 1, further comprising converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior and then calculating a channel response function on the signal prior to said quantizing, wherein said calculating includes subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein said quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

8. A method as claimed in claim 1, wherein said quantizing includes estimating a time delay attenuation of the channel response function.

9. An article comprising:

a storage medium having stored thereon instructions that, when executed by a computing platform, result in the encoding of a channel state information packet by:

quantizing a channel response function of a signal received from a transmitter; and

generating a packet to be transmitted back to the transmitter wherein the packet includes the quantized channel response function.

10. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by, where the channel response function is represented by M complex numbers, limiting the channel response function to N complex numbers where N is less than M.

11. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to said quantizing.

12. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by converting the signal from at least one of a frequency domain representation or a time domain representation to power allocation and modulation type instructions prior to said quantizing.

13. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to said quantizing, and where the channel response function is represented by M complex numbers, limiting the channel response function to N complex numbers where N is less than M, wherein the N complex numbers are limited to values having time delays less than a predetermined delay spread.

14. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by calculating a channel response function on the signal prior to said quantizing, wherein said calculating includes subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein said quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

15. An article as claimed in claim 9, wherein the instructions, when executed, further result in the encoding of a channel state information packet by converting the signal from a frequency domain representation of the signal to a time domain representation of the signal prior and then calculating a channel response function on the signal prior to said quantizing, wherein said calculating includes subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein said quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

16. An article as claimed in claim 9, wherein said quantizing includes estimating a time delay attenuation of the channel response function.

17. A method, comprising:

parsing a channel state information packet received from a device after transmitting a signal to the device to obtain a quantized channel response function of the signal; and

dequantizing the quantized channel response function to provide a channel response function.

18. A method as claimed in claim 17, wherein the channel response function is an estimate of the channel response function, wherein the estimate of the channel response function is represented by N complex numbers, wherein the channel response function is represented by M complex numbers, and wherein N is less than M.

19. A method as claimed in claim 17, further comprising, where the channel response function of the channel state information packet is represented as a residual of the channel response function, calculating an updated estimate of the channel response function by adding a current estimate of the channel response function to the residual of the channel response function.

20. A method as claimed in claim 17, further comprising, where the channel response function is a time domain representation, converting the time domain representation of the channel response function to a frequency domain representation of the channel response function.

21. An article, comprising:

a storage medium having stored thereon instructions that, when executed by a computing platform, result in the decoding of a channel state information packet by:

parsing a channel state information packet received from a device after transmitting a signal to the device to obtain a quantized channel response function of the signal; and

dequantizing the quantized channel response function to provide a channel response function.

22. An article as claimed in claim 21, wherein the channel response function is an estimate of the channel response function, wherein the estimate of the channel response function is represented by N complex numbers, wherein the channel response function is represented by M complex numbers, and wherein N is less than M.

23. An article as claimed in claim 21, wherein the instructions, when executed, further result in the decoding of a channel state information packet by, where the channel response function of the channel state information packet is represented as a residual of the channel response function, calculating an updated estimate of the channel response function by adding a current estimate of the channel response function to the residual of the channel response function.

24. An article as claimed in claim 21, wherein the instructions, when executed, further result in the decoding of a channel state information packet by, where the channel response function is a time domain representation, converting the time domain representation of the channel response function to a frequency domain representation of the channel response function.

25. An apparatus, comprising:

a baseband processor; and

a transceiver to couple to said baseband processor and an omnidirectional antennal;

wherein said baseband processor quantizes a channel response function of a signal received from a transmitter via said transceiver and generates a channel state information packet to be transmitted back to the transmitter wherein the packet includes the quantized channel response function.

26. An apparatus as claimed in claim 25, wherein said baseband processor, where the channel response function is represented by M complex numbers, limits the channel response function to N complex numbers where N is less than M.

27. An apparatus as claimed in claim 25, wherein said baseband processor converts the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to quantizing the channel response function.

28. An apparatus as claimed in claim 25, wherein said baseband processor converts the signal from a frequency domain representation of the signal to a time domain representation of the signal prior to quantizing the channel response function, and, where the channel response function is represented by M complex numbers, limits the channel response function to N complex numbers where N is less than M, wherein the N complex numbers are limited to values having time delays less than a predetermined delay spread.

29. An apparatus as claimed in claim 25, wherein said baseband processor calculates a channel response function on the signal prior to quantizing the channel response function, by subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein the quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

30. An apparatus as claimed in claim 25, wherein said baseband processor converts the signal from a frequency domain representation of the signal to a time domain representation of the signal prior and then calculates a channel response function on the signal prior to quantizing the channel response function, by subtracting a channel estimate from the channel response function to provide a residual value of the channel response function, wherein the quantizing includes quantizing the residual value of the channel response function, and wherein the packet includes a quantized residual value of the channel response function.

31. An apparatus, comprising:

a baseband processor; and

a transceiver to couple to said baseband processor and an omnidirectional antennal;

wherein said baseband processor parses a channel state information packet received from a device after transmitting a signal to the device to obtain a quantized channel response function of the signal, and dequantizes the quantized channel response function to provide a channel response function.

32. An apparatus as claimed in claim 31, wherein the channel response function is an estimate of the channel response function, wherein the estimate of the channel response function is represented by N complex numbers, wherein the channel response function is represented by M complex numbers, and wherein N is less than M.

33. An apparatus as claimed in claim 31, wherein said baseband processor, where the channel response function of the channel state information packet is represented as a residual of the channel response function, calculates an updated estimate of the channel response function by adding a current estimate of the channel response function to the residual of the channel response function.

34. An apparatus as claimed in claim 31, wherein said baseband processor, where the channel response function is a time domain representation, converts the time domain representation of the channel response function to a frequency domain representation of the channel response function.